

DRAINAGE REPORT CHECKLIST

All reports shall be bound and include the following information:

Report Cover

- ☐ Project title/development name
- ☐ Site address
- ☐ Site map and parcel
- ☐ Owner's name, address, and telephone number
- ☐ Developer's name, address, fax and telephone number
- ☐ Engineer's and Surveyor's names, address, fax and telephone number
- ☐ Date of report (with latest revision date(s))
- ☐ Engineer's stamp

Pre- and Post-development Plans

- ☐ Pre- and post-development plans on 24"x36" sheets in AutoCAD format
- ☐ Clearly show all pre and post subcatchment areas
- ☐ Show all ultimate point source discharge locations for each subcatchment area
- ☐ Show all Tc paths with lengths and slopes for each subcatchment area
- ☐ Plans should show enough topographic information outside of the site to show pre and post discharge impacts

Summary

- ☐ Description of project
- ☐ Locus map
- ☐ Soil Conservation Service maps
- ☐ Description of existing conditions/use
- ☐ Description of proposed conditions/use
- ☐ Flow Summary table showing changes in pre and post-development flows for the 2, 10, 25, and 100-year storm events-Post-development flows shall not exceed pre-development flows

Pre-Development Conditions

- ☐ Pre-development drainage conditions (describe in report and coordinate with pre-development plans)
- ☐ Describe all existing subcatchment areas
- ☐ Describe (and label on plan) impervious and pervious areas within each subcatchment
- ☐ Provide CN number calculations
- ☐ Provide Tc calculations
- ☐ Provide flow calculations for the 2, 10, 25, and 100-year storm events
- ☐ Provide hydrographs showing time-stage relationship (peak flow, peak hour)
- ☐ Test Pit Data (locations shall be shown on pre- and post-construction plans)
- ☐ Groundwater elevations
- ☐ Percolation test results

Post-Development Conditions

- ☐ Post-development drainage conditions (describe in report and coordinate with post-development plans)
- ☐ Describe all existing subcatchment areas
- ☐ Describe (and label on plan) impervious and pervious areas within each subcatchment
- ☐ Provide CN number calculations
- ☐ Provide Tc calculations
- ☐ Provide flow calculations for the 2, 10, 25, and 100-year storm events
- ☐ Provide hydrographs showing time-stage relationship (peak flow, peak hour)

Detention Basins

- ☐ Description of basin (details, method of construction, sizing etc.)
- ☐ Provide flow calculations for the 2, 10, 25, and 100-year storm events-clearly indicate total flow into and out of basin
- ☐ Provide hydrographs showing time-stage relationship inside basin (peak flow, peak elevation, peak hour)
- ☐ Outfall structure detail showing all outfall elevations
- ☐ Recommend outfall structure with a low flow discharge and grated top
- ☐ Show all outfall structure discharge elevations and 100-year storm event elevation

DRAINAGE REPORT CHECKLIST (cont'd.)

- ☐ Detention basin sections showing all elevations including 100-year storm event elevation
- ☐ Emergency overflow spillway made of rip rap
- ☐ Basin discharge shall have flared end with rip rap apron
- ☐ Recommend 3:1 basin side slopes
- ☐ Recommend impervious core material keyed into existing subgrade within berm
- ☐ Recommend installing seepage collar around discharge pipe
- ☐ Recommend 10 foot wide level access around entire basin for maintenance
- ☐ Recommend enclosing basin with gated fence
- ☐ Verify groundwater elevations do not impact operation of basin

Hydraulic Calculations

- ☐ Hydraulic calculations shall be based on the 25-year storm event
- ☐ Provide a hydraulic summary table

Stormwater Management

- ☐ Completed Stormwater Management Form from the latest edition of the Massachusetts Department of Environmental Protection Stormwater Management Policy
- ☐ Summary of pre and post-development flows
- ☐ Infiltration flows from recharge structures can not be subtracted from post-development flow calculations
- ☐ Provide water quality volume calculations (supported by SCS soil data)
- ☐ Describe Best Management Practice method proposed to improve water quality
- ☐ Provide TSS removal calculations
- ☐ Provide oil separation
- ☐ Provide recharge to groundwater volume calculations
- ☐ Recharge roof drains and provide calculations
- ☐ All subsurface structures shall be accessible for maintenance
- ☐ All recharge rates shall be supported by actual percolation test results

Operation and maintenance section

- ☐ All drainage structures shall be inspected after every storm
- ☐ Inspection reports shall be filed for each inspection
- ☐ Inspection reports shall be filed with the Conservation Commission and City Engineer yearly for compliance
- ☐ All drainage structures shall be cleaned as required to remove debris and sediment
- ☐ Parking lots shall be swept as required to remove debris and sediment

General Drainage Recommendations

- ☐ Catch basins shall have 4 foot deep sumps
- ☐ Recommend drainage pipes be RCP
- ☐ Recommend all drainage pipes be 12 inches in diameter (minimum)
- ☐ Recommend minimum cover over pipe shall be 2.5 feet
- ☐ Recommend minimum preferred slope of drainage pipe is 1.0% (0.5% absolute minimum)
- ☐ Recommend maximum slope of drainage pipe is 9%
- ☐ Recommend velocity of flow within the pipe not be less than 2 ft/s (cleaning) or greater than 10 ft/s (scour)

Details

- ☐ Detention basin section showing bottom elevation, invert elevations, 100-year storm event elevation, 1' freeboard, top of basin elevation, outlet structure elevations, etc...
- ☐ Outlet structure detail
- ☐ Catch basin detail
- ☐ Trench detail